

What I claim is:

1. A method for performing a mobile communication signal search using a multipath signal searcher in a code division multiple access (CDMA) wireless communication system, the multipath signal searcher including a plurality of search paths searching for the mobile communication signal, the method comprising the steps of:
 - 5 assigning a group of time offsets to said plurality of search paths, where the time offsets of said group of time offsets are distributed across a search window such that time offsets extend from a first end of said search window to a second end of said search window, and where each said search path searches at one corresponding time offset of said group of time offsets;
 - 10 calculating a search metric for each said search path at each said corresponding time offset.

15

200909260

2. The method of claim 1, wherein said group of time offsets are distributed across said search window evenly such that there is an equal distance between adjacent time offsets.

5 3. The method of claim 2, wherein said group of time offsets are even offsets.

4. The method of claim 2, wherein said group of time offsets are odd offsets.

10

5. The method of claim 1, wherein said multipath signal searcher operates in a wideband CDMA mode, and wherein said plurality of search paths coherently accumulate said search metric over a plurality of power control groups and non-coherently accumulate said search metric over an integration period.

15

6. The method of claim 1, wherein said multipath signal searcher operates in a narrowband CDMA mode.

7. The method of claim 1, further comprising the steps of:
20 outputting said search metric for each of said group of search paths;
sorting and ranking said search metrics to produce a best set of time offsets; and

25 communicating said best set of time offsets to a finger manager for operating a plurality of finger demodulators to receive said mobile communication signal.

0076043 01104
T.02110 : E.F.03250

~~8~~ A method for performing a mobile communication signal search using a multipath signal searcher, the multipath signal searcher including a number of search paths searching for the mobile communication signal in a search window defined by a plurality of time offsets, the method comprising the steps of:

5 assigning a first group of said time offsets to a first group of said plurality of search paths, where said first group of time offsets are evenly distributed across the entire search window;

 searching said first group of search paths for said mobile communication signal;

10 in response to said searching said first group of search paths, assigning a second group of said time offsets to a second group of said plurality of search paths, where said time offsets of said second group of time offsets are distributed evenly across the entire search window and are non-identical to the time offsets of said first group of time offsets; and

15 searching said second group of search paths for said mobile communication signal.

096043 0400
T02T0"ET03L60

9. The method of claim 8, wherein said first group of time offsets comprises even time offsets and wherein said second group of time offsets comprises odd time offsets.

5 10. The method of claim 9, wherein said steps of searching said first group of search paths and searching said second group of search paths further comprises the steps of:

calculating a search metric for each said search path at each said corresponding time offset;

10 sorting and ranking said search metrics to produce a best set of time offsets; and

communicating said best set of time offsets to a finger manager for operating a plurality of finger demodulators to receive said mobile communication signal.

15

097043-0100

~~11~~ A method for performing a mobile communication signal search using a multipath signal searcher, the multipath signal searcher including a number of search paths searching for the mobile communication signal in a search window defined by a plurality of time offsets, the method comprising the steps of:

5 identifying a first group of time offsets and a second group of time offsets, where said first group of time offsets and said second group of time offsets are distributed across said search window;

assigning each one of said first group of time offsets to one of a first group of said search paths;

10 assigning each one of said second group of time offsets to one of a second group of said search paths;

commencing at a first time, simultaneously searching each of said first group of search paths for said mobile communication signal over a first integration period;

15 commencing at a second time which is offset from said first time, simultaneously searching each of said second group of search paths for said mobile communication signal over a second integration period.

20

096043-0400

12. The method of claim 11, wherein said first group of time offsets comprise only even time offsets and wherein said second group of time offsets comprise only odd time offsets.

5 13. The method of claim 11, wherein said first group of time offsets are distributed across said search window evenly, such that the spacing between time offsets in said first group of time offsets is identical and wherein said second group of time offsets are distributed across said search window evenly, such that the spacing between time offsets in said second group of time offsets is identical.

10

14. The method of claim 11, wherein the time offsets in said first group of time offsets and the time offsets in said second group of time offsets are equally distributed across said search window in an alternating pattern, such that there is a single time offset of said second group of time offsets between two adjacent time offsets of said first group of time offsets.

15

15. The method of claim 11, wherein the first integration period and the second integration period have equal duration in time.

20

16. The method of claim 15, wherein the offset between said first time and said second time is one half of said duration in time.

25

17. The method of claim 16, further comprising the steps of:
after said first integration period, sorting and ranking output signals
from each search path of said first group of search paths to produce a best set of time offsets; and

communicating said best set of time offsets to a finger manager for
operating a plurality of finger demodulators to receive said mobile communication
signal.

30

Patented: 07/09/2006

18. The method of claim 16, further comprising the steps of:
after said second integration period, sorting and ranking output signals
from each search path of said second group of search paths to produce a best set of
time offsets; and
- 5 communicating said best set of time offsets to a finger manager for
operating a plurality of finger demodulators to receive said mobile communication
signal.

TOCTTO"ETHO9LEO